

Amendments to the Claims

This listing of claims will replace all prior listings of claims in the application.

Listing of Claims

1. (Canceled)

~~{2}~~ 2. (Currently Amended) The induction heating method ~~of the article made of the thin sheet according to claim 1~~claim 13, further comprising:

a step of ~~quenching for~~ quenching at least the whole of the ~~entire~~ region ~~to be heated to harden the whole of the region to be heated which is of the thin sheet after being heated to a~~ the temperature at least equal to or more than the target temperature, set up after said step of reincreasing the temperature to harden the entire region of the thin sheet.

3. (Canceled)

~~{4}~~ 4. (Currently Amended) The induction heating apparatus ~~of the article made of the thin sheet according to claim 3~~claim 19, wherein said current controller ~~is a timer type controller having~~has a timer for stopping or reducing temporarily the power application of the high-frequency current to said heating inductor when a time measured by the timer ~~comes to~~reaches a predetermined elapsed time ~~since~~ from the start of the power application of the high-frequency current to said heating inductor.

~~{5}~~ 5. (Currently Amended) The induction heating apparatus ~~of the article made of the thin sheet according to claim 3~~claim 19, wherein said current controller ~~is an actual temperature measurement type controller having~~has a temperature measurer for measuring the temperature of the

region to be heated, ~~for stopping and stops or reducing~~ reduces temporarily the power application of the high-frequency current to said heating inductor when the temperature of the region to be heated ~~measured by the temperature measurer~~ becomes a predetermined temperature.

~~{6}~~ 6. (Currently Amended) The induction heating apparatus ~~of the article made of the thin sheet according to claim~~ 3claim 19, wherein said current controller ~~is an impedance-~~ knowing type controller having has a frequency tracker for tracking the high-frequency current of said heating inductor corresponding to an impedance of the region to be heated, ~~for stopping or reducing and stops or reduces~~ temporarily the power application of the high-frequency current to said heating inductor when a resonant frequency of the high-frequency current ~~tracked by the frequency tracker~~ becomes a predetermined frequency.

~~{7}~~ 7. (Currently Amended) The induction heating apparatus ~~of the article made of the thin sheet according to claim~~ 3claim 19, wherein said heating inductor ~~is constituted with~~ comprises a plurality of good conductors ~~whereof~~ having an inductive portion which extends along an extending direction of the region to be heated and is arranged side by side in a direction perpendicular to the extending direction so that the region to be heated is covered, and ~~constituted with the~~ plural good conductors are connected in parallel.

~~{8}~~ 8. (Currently Amended) The induction heating apparatus ~~of the article made of the thin sheet according to claim~~ 3claim 19, further comprising a quencher for quenching at least the region to be heated after the region ~~to be heat~~ reaches ~~at the~~ temperature ~~equal to or more than~~ of at least equal to the target temperature.

9.-12. (Canceled)

13. (New) A method of heating a region of a thin sheet by inductive heating to a temperature at least equal to a target temperature which is higher than a magnetic transformation point of the thin sheet comprising the steps of:

applying a high-frequency current to a heating inductor having an inductive portion for heating inductively the entire region of the thin sheet simultaneously;

increasing the temperature of the region of the thin sheet by induction heating using the heating inductor;

reducing the application of the high-frequency current to the heating inductor to allow the temperatures throughout the entire region of the thin sheet to become more equalized; and

increasing the application of the high-frequency current to the heating inductor to increase the temperature of the entire region of the thin sheet to the temperature at least equal to the target temperature.

14. (New) The induction heating method according to Claim 13, wherein the application of high-frequency current to the heating inductor is stopped to allow the temperatures throughout the entire region of the thin sheet to become more equalized.

15. (New) The induction heating method according to Claim 13, wherein the thin sheet has a thickness not exceeding 3.2mm.

16. (New) The induction heating method according to Claim 13, wherein the thin sheet has a thickness not exceeding 2.3mm.

17. (New) The induction heating method according to Claim 13, additionally comprising the step of forming the thin sheet into an article for a four-wheeled vehicle body.

18. (New) The induction heating method according to Claim 17, wherein the article is a reinforcing member for a center pillar.

19. (New) An induction heating apparatus for heating a region of a thin sheet by inductive heating to a temperature at least equal to a target temperature which is higher than a magnetic transformation point of the thin sheet, said apparatus comprising:

a heating inductor comprising an inductive portion for heating inductively the entire region of the thin sheet simultaneously;

a power supply device for applying a high-frequency current to the heating inductor; and

a current controller for reducing the application of the high-frequency current to the heating inductor to allow the temperatures throughout the entire region of the thin sheet to become more equalized and then for increasing the application of the high-frequency current to the heating inductor to increase the temperature of the entire region of the thin sheet to the temperature at least equal to the target temperature.

20. (New) The induction heating apparatus of Claim 19, wherein the current controllers stops the application of high frequency current to the heating inductor to allow the temperatures throughout the entire region of the thin sheet to become more equalized.